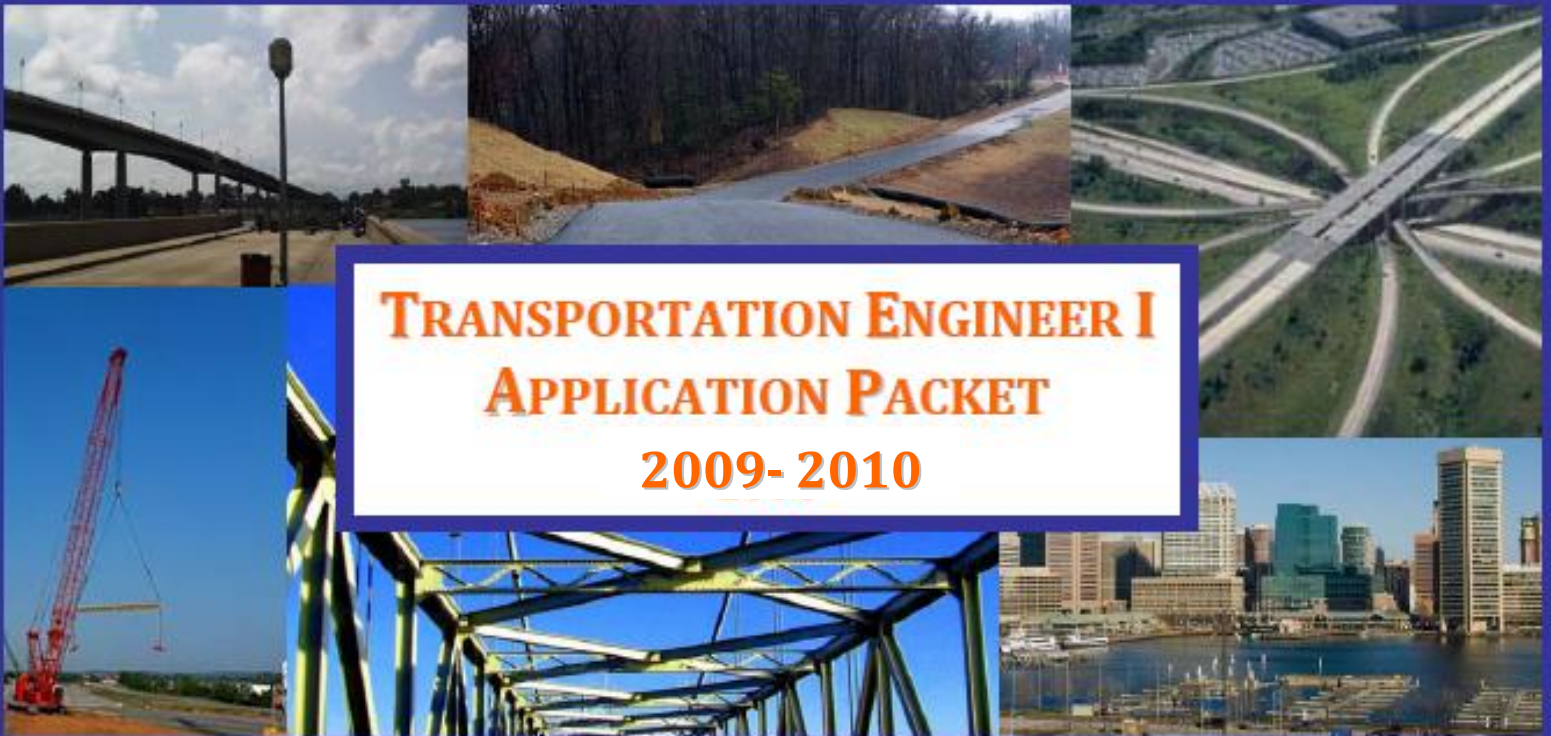




# MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

## RECRUITMENT & EXAMINATION DIVISION



**TRANSPORTATION ENGINEER I  
APPLICATION PACKET  
2009- 2010**

At the Maryland State Highway Administration (SHA), we are proud of our tradition of excellence. Since its inception as the State Roads Commission in 1908, SHA has continued to build on its foundation of quality and integrity. 2008 marked the 100<sup>th</sup> Anniversary of modern road building in Maryland! At SHA, we have exciting entry and advanced level Civil/Transportation Engineering opportunities available.



## Why choose SHA?

As an employee in one of our diverse career tracks, you may lead complex, multi-disciplinary projects as well as have the opportunity to serve on nationally scaled initiatives. Individuals within one year of completing a BSCE are encouraged to apply!

## Benefits

### Transportation Engineer Salary

- Over \$49,000 starting salary
- Over \$56,000 after one year
- Steady growth

### Leave

- Two weeks vacation after first year, three weeks after five years, four weeks after 10 years, and five weeks after 20 years
- Seven personal days
- 10 paid holidays
- Three weeks earned sick leave each year
- Military leave, legal leave, and cash overtime

### Health Plans

- Medical, prescription, dental, vision, and term life insurance
- Personal accident & dismemberment insurance
- Flexible spending accounts
- Competitive state subsidy for benefit plans (80 percent of cost)

### Retirement Plans

- Employees vested in the contributory pension plan after five years of service
- 30 year service retirement
- Supplemental retirement plans 401(k) and 457 available

### EIT/PE exams

- Review classes are available for the EIT/PE exams
- Fees for the PE reimbursed with a passing grade

### Education/ Training

- Individualized professional development plans
- Tuition reimbursement for approved courses
- Advanced Education Program for approved graduate programs
- Option to attend courses during work hours (up to six hours a week of administrative leave at supervisor's discretion)
- Graduate Engineer's Training Program
- Supervisory Training Program
- Managing for Results Program
- Career Counseling and Guidance Services

### Additional Benefits

- Free public transportation services
- State Credit Union membership for employee and family
- Wellness Program

**The State Highway Administration (SHA)**, a modal of the Maryland Department of Transportation (MDOT) is responsible for more than 16,000 lane miles of interstate, primary and secondary roads, and more than 2,500 bridges. SHA employees plan, design, build, and maintain these roads and bridges to the highest safety and performance standards possible while paying close attention to sociological, environmental, ecological, and economic concerns. SHA employs 3,200 people at our Baltimore headquarters, Hanover complex, and seven districts throughout the state.

## Engineering Offices

### Office of Structures

#### Structure Hydrology and Hydraulics Division

This office is responsible for design, inspection, and maintenance of all bridges in the State System. This division is responsible for performing hydrologic, stream morphology, hydraulics, bridge scour, and channel stability studies of large (>1 sq. mile in drainage area) streams and rivers. This includes hydraulic design of bridges and culverts, fish passage through culverts, scour safety determination, and flooding studies that related to SHA waterway crossings.

#### Bridge Hydraulics

In this section, engineers typically perform hydrologic and hydraulic studies of large (over one square mile in drainage area) streams and rivers. This includes hydraulic design of bridges and culverts, scour safety determination and flooding evaluation.

#### Construction Inspection

The Construction Inspection Division's (CID) goal is to have the Transportation Engineers it hires become the Project Engineers (PE) on major construction projects. These projects include multi-million dollar contracts for highways, bridges and interchange construction. To facilitate your progression to the PE level you will be enrolled in our Transportation Engineer Rotation Program. This self-directed four year program is designed to help the entry level engineer learn about the various aspects of construction management and administration.

#### Highway Design

A new engineer in the Highway or Community Design Division will be responsible for the geometric design of a roadway project and management of the overall design, schedule and budget of the project, resulting in a complete set of plans, specifications and estimate for construction.

### Highway Hydraulics

This division is responsible for hydrologic and hydraulic analysis and design of highway drainage systems, including storm water management and pollution reduction facilities, erosion and sediment control, storm drains, culverts, and small dams. Additional responsibilities include flood evaluations, drainage problem investigations, and stream rehabilitation.

### Planning & Preliminary Engineering

This division is responsible for obtaining location, design, and environmental approvals for State highway improvements. Engineers perform comprehensive planning, community liaison functions and transportation studies. Engineers also work with the public and regulatory agencies on key issues in the planning of highway projects.

### Traffic & Safety

This office is responsible for the study, planning, design, installation and operation of all traffic control devices along the State system.

### Materials Technology

This office is responsible for the management and design of geotechnical and pavement structures as well as the testing and inspection of constructed and fabricated materials used in the construction and maintenance of roads and bridges.

### Plats & Surveys

This division is made up of two unique sections: The Survey section is responsible for topographic, metes & bounds, photogrammetric, geodetic control layout, hydraulic and construction/right of way stake-out surveys. This section also handles all underground utility designating and CADD processing. The Plats section develops SHA right of way plats for the acquisition and conveyance of real property and is responsible for property line analysis, survey data processing and land records research and works closely with the Office of Real Estate. An employee in this division is subject to a 1-2 year statewide field survey rotation.



# Application & Interview Process

The State Highway Administration (SHA) is both an exciting and dynamic place to work! We are proud of our tradition of excellence and we hold only the highest standards of professionalism, honesty, and integrity. We strive for continuous improvement in our products, while maintaining customer satisfaction as our number one goal. Since its inception as the State Roads Commission in 1908, SHA has continued to build on its foundation of quality and integrity. 2008 marked the 100<sup>th</sup> Anniversary of modern road building in Maryland! At SHA, we have exciting and advanced level Civil/Transportation Engineering opportunities available in a variety of areas including Office of Structures, Bridge Hydraulics, Construction Inspection, Highway Design, Highway Hydraulics, Planning & Preliminary Engineering, Traffic & Safety, Materials Technology, and Land Surveying Engineering.

## General Information

**Filling out the Application.** You have the option of completing this application packet and mailing it in or applying online at <http://jobs.mdot.state.md.us>. Your application, including résumé and transcripts, is evaluated using a structured system of scoring. Office-specific as well as general classification requirements must be reviewed and evaluated to ensure a fair and unbiased appraisal of your employment potential. Because we rely so heavily on the accuracy and completeness of your application, and the potential score derived from its evaluation, it is important that you fill out the application in its entirety. Incomplete applications will delay the process or result in a rejection.

**The Evaluation Process.** It may take a few weeks to process your application, but do not hesitate to call us to ensure we have received it and to track its progress (410-545-5552 or toll-free at 1-877-743-9311). If your qualifications match up with what we need, and we have a position open in the area(s) you selected, we may contact you for an interview. Please note, if an area you have selected for an interview does not have any available openings at the time of your application, we will be unable to schedule an interview at that time. However, we will keep your application on file and contact you should an opening become available.

**The Interview Process.** You will be contacted within 4 weeks of your submission to discuss the completeness of your application (if necessary), to schedule a writing sample (via email), and/or to schedule an interview. Interviews are generally the last Thursday of each month. Additionally, because offices only interview when they have vacancies, you may be contacted for interview during future months. If you apply to multiple offices (i.e., Planning Design Division and Office of Structures) then you could receive interviews and/or offers at different times; please keep this in mind when evaluating an initial offer. Most interviews are held at SHA headquarters located in downtown Baltimore, but you can opt to complete the interview via phone if you are unable to fit a long trip into your schedule.

## What to Expect on the Interview

Our interview process is much different than what one might expect or read about in preparing for a job interview. The interview will be conducted by a panel of 3 to 5 employees and be composed of two parts:

### 1. The Informational Section

This portion of the interview is informal and will not be used to evaluate your performance. We will begin by telling you a little bit about our office and the position for which you are interviewing, and then ask you for any general questions you may have. There is a time limit on the interview, so don't spend too much time on this portion; after you receive an offer, you will be encouraged to come back and visit the office to learn much more about our organization and culture before you make a final decision.

### 2. The Test Section

Like the application, this portion of the interview is structured and scored to ensure a fair and unbiased appraisal of your performance. During this portion of the interview the panel may take turns reading prepared questions. They will be looking for certain benchmarks in your answers, but will not provide you with feedback on your answers. Be as thorough as possible. You may be asked questions regarding customer service, diversity, your general background, and your technical skills. The technical questions may be related to coursework, computer skills, school projects, or other areas that will demonstrate your understanding of basic concepts related to the position. Each candidate is given the same list of questions for that particular office or division.

**CANDIDATES MUST BRING A PRINTED COPY OF THE COMPLETED ON-LINE APPLICATION FORM OR A COMPLETED DTS-1 APPLICATION FORM TO EACH INTERVIEW.**

**Please Note:** Effective June 30, 2009 The Maryland State Highway Administration will no longer sponsor new employees in application of the H-1B Visa. All applicants must be legally authorized to work in the United States under the Immigration and Reform Control Act of 1986.

**Maryland Department of Transportation  
State Highway Administration****TRANSPORTATION ENGINEER I - APPLICATION PACKET****MINIMUM QUALIFICATION:**

**You must possess an Accredited Bachelor's Degree in Civil Engineering or be completing the degree requirements within the next twelve (12) months. All applications that do not meet this minimum qualification will not be processed.**

The information you provide in this application packet will be used to place you on a list of eligible candidates for each section in which you are interested (refer to page 5). Please read the directions for each section carefully before beginning that part of the application.

**If you would like to complete the TE I application on-line, please visit <http://jobs.mdot.state.md.us>, click on Current Job Openings, and then Transportation Engineer I for the State Highway Administration.**

If you have any questions, please call the Recruitment and Examination Division at 410-545-5552 or toll free at 1-877-743-9311. Please send all completed materials to:

RECRUITMENT AND EXAMINATION DIVISION  
707 N. CALVERT STREET, ROOM C-602  
BALTIMORE, MD 21202

**CHECKLIST (✓) FOR PACKET COMPLETION:**

- ☐ Application for Employment (page 2).
- ☐ Education and Coursework (page 3).
- ☐ Relevant Experience (page 4).
- ☐ Oath Attesting to Accuracy of Information (page 4).
- ☐ Employment Options (page 5).
- ☐ Transcripts (may be unofficial) from all Accredited Colleges/Universities where you completed engineering related courses. This should include all junior or community colleges.
- ☐ Foreign Education Credential Evaluation, if applicable (refer to page 3).
- ☐ Current Resume (resumes alone will not be accepted and can be more than 1 page), which **must** include:
  - ☐ All Colleges/Universities attended.
  - ☐ Engineering employment, including specific duties (refer to the top of page 4).
  - ☐ Two (or more) business/academic references, including name, title, address and phone.
  - ☐ E-mail address and/or fax number where you can be reached.

Name \_\_\_\_\_ SSN \_\_\_\_\_

## Application for Employment Transportation Engineer I

**OFFICE USE ONLY**  
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APPROVED  
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DISAPPROVED  
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PENDING  
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BY  
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REASON

Please fill out this application completely. Omissions may result in your application not being considered for employment. Resumes may **NOT** be substituted for this application. Type or print clearly. Information provided is confidential and will only be used by authorized personnel. Applicants who are within twelve (12) months of receiving a Bachelor's degree in Civil Engineering can be approved for the process **pending completion** of the degree. Qualified Applicants may be subject to background and reference checks.

Social Security Number: \_\_\_\_\_

Phone # where you can be reached during your University or  
College's winter break: (     ) \_\_\_\_\_

Print Name: \_\_\_\_\_  
Last First Middle

Address: \_\_\_\_\_

City County State Zip Code

Home Phone: (     ) \_\_\_\_\_ Work Phone: (     ) \_\_\_\_\_ E-mail: \_\_\_\_\_

**Please check (✓) where you will accept employment.**

_____ Garrett	_____ Prince Georges
_____ Allegany	_____ Charles
_____ Washington	_____ Calvert
_____ Frederick	_____ St. Mary's
_____ Carroll	_____ Anne Arundel
_____ Montgomery	_____ Queen Anne's
_____ Baltimore City	_____ Talbot
_____ Baltimore County	_____ Caroline
_____ Howard	_____ Dorchester
_____ Harford	_____ Wicomico
_____ Cecil	_____ Somerset
_____ Kent	_____ Worcester

**How did you hear about us? Please check (✓).**

\_\_\_\_\_ Newspaper  
\_\_\_\_\_ College recruitment  
\_\_\_\_\_ Employment office  
\_\_\_\_\_ Bulletin Board  
\_\_\_\_\_ Heard about from an employee  
\_\_\_\_\_ Interest File  
\_\_\_\_\_ Internet (please list which site):  
\_\_\_\_\_  
\_\_\_\_\_ Other (specify):  
\_\_\_\_\_

**Please check (✓) availability below.**

\_\_\_\_\_ Full-Time Employment Only  
\_\_\_\_\_ Part-Time Employment Only  
\_\_\_\_\_ Full-Time and/or Part-Time

**Did you graduate from high school, or have you obtained a GED?**

\_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Year

Name of High School \_\_\_\_\_

Address \_\_\_\_\_

**Applicants are requested to voluntarily provide the information below for statistical purposes only.**

**Failure to do so will not affect your chances for employment.**

\_\_\_\_\_ Male  
\_\_\_\_\_ Female

Birth Date: \_\_\_\_\_

Languages Spoken:  
\_\_\_\_\_  
\_\_\_\_\_

**Ethnic/Race Identification**

\_\_\_\_\_ Hispanic or Latino Origin

Select one or more of the following races. If multiracial, check all that apply.

\_\_\_\_\_ American Indian or Alaska Native

\_\_\_\_\_ Asian

\_\_\_\_\_ Black or African American

\_\_\_\_\_ Native Hawaiian or Other Pacific Islander

\_\_\_\_\_ White

**AN EQUAL OPPORTUNITY EMPLOYER**

[www.marylandtransportation.com](http://www.marylandtransportation.com)

Arrangements and/or accommodations will be provided upon request for differently-abled persons.

Maryland Relay Service - [www.mdrelay.org](http://www.mdrelay.org) - (voice) 1-800-201-7165, (TTY/HCO) 1-800-735-2258, (Spanish) 1-800-877-1264

Name \_\_\_\_\_ SSN \_\_\_\_\_

## Education and Coursework

### Transportation Engineer I

If you have not already obtained copies of all your college/university transcripts to enclose with this application, you or your college/university must submit your transcripts to us immediately.

If any of your colleges/universities had a “non-traditional” credit allotment system or schedule (i.e. trimester classes, less than 120 credits to graduate, etc.), please explain that system in the space provided below. You may attach an additional sheet, if necessary.

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#### Additional Coursework (not listed on transcripts):

Please list below all engineering courses that will not be listed on your transcripts. Specifically, focus on those courses you are taking now or will be completing within the next 12 months.

Course Title	Course #	# of credits	Date to be completed

Your University Registrar's phone number: (     ) \_\_\_\_\_

### IMPORTANT NOTICE TO ALL APPLICANTS WITH FOREIGN EDUCATION CREDENTIALS

To determine whether your foreign school credentials are equivalent to a college education in the United States and to help us review your transcripts fairly, you will need to have your foreign school credentials evaluated on a **course by course basis**.

As the State Highway Administration does not evaluate foreign school credentials, **you must contact an independent evaluation service**, such as the services listed below:

**World Education Services, Inc.**

P.O. Box 57206  
Washington, D.C. 20037  
phone number: 1-800-937-3897  
[www.wes.org](http://www.wes.org)

**Evaluation Service, Inc.**

P.O. Box 1455  
Albany, NY 12201  
phone number: 518-672-4522  
fax number: 518-672-4877

**Education Credential Evaluation**

P.O. Box 514070  
Milwaukee, WI 53203-3470  
Fax: (414) 289-3411  
e-mail: [eval@ece.org](mailto:eval@ece.org)  
[www.ece.org](http://www.ece.org)

Please remember that it remains necessary for you to submit copies of all transcripts from your undergraduate and/or graduate programs. If we do not receive this information as requested, your application will **NOT** be considered as meeting the minimum degree requirements and will result in disqualification from the application process.

Name \_\_\_\_\_ SSN \_\_\_\_\_

## Relevant Experience

### Transportation Engineer I

#### Resume:

On your resume, please list and describe all previous civil/transportation engineering related jobs you have held, starting with your most recent. For every job, include the company name and phone number, your job title and dates of employment, number of hours worked per week, number of persons supervised and your reason for leaving. Please also include your specific job duties.

#### Advanced Engineering Licenses:

Please check (✓) each appropriate box if you have registered to take or have passed any of the following examinations.

Professional Examination	Registered to Take	Passed	Date of Exam (Month/Year)
Engineering in Training/Fundamentals in Engineering			
Surveyor in Training			
Fundamentals of Surveying			
Professional Land Surveying			
Professional Engineer			
Other:			
Other:			

#### Engineering/Professional/Social/Community Organizational Offices Held:

Please list below all professional organizations in which you have held a leadership role. Be as specific as possible regarding the dates of offices held.

Organization	Office Held (i.e. President/Secretary)	Dates of Office

## Oath Attesting to Accuracy of Information

### Transportation Engineer I

I understand that this Application Packet and all attachments to it are a part of my examination and the oath attesting to the accuracy of my application applies to all information presented in this package and attachments. I also understand that any misleading or inaccurate information will result in not receiving credit for that element of my score and/or disqualification from the application process. I further understand that the elements as described above will be used to compute my final score. In addition, I understand that qualified applicants may be subject to background and reference checks.

Printed Name \_\_\_\_\_ Date \_\_\_\_\_

Signature \_\_\_\_\_

Examination Packet revised 08/27/2009



## Transportation Engineer I - Employment Options

This form is used for you to select the engineering areas in which you would accept employment. This allows hiring managers to review only those candidates who are seeking a career in their particular section. **Please be sure to select all areas in which you would accept employment as you will not be able to change your options until after your name expires from our list.**

☒ Select this only if you have the knowledge, relevant coursework **and** desire to work in that section. You may check ☒ in more than one area.

**OFFICE OF STRUCTURES.** This office is responsible for design, inspection, and maintenance of all bridges in the State system. **Coursework in Structural Analysis, Steel Design, Concrete Design and Foundation Design/Engineering is required.**

☐ I have the knowledge, relevant coursework **and** desire to work in this section

**BRIDGE HYDRAULICS.** In this division, engineers typically perform hydrologic and hydraulic studies of large (over one square mile in drainage area) streams and rivers. This includes hydraulic design of bridges and culverts, scour safety determination and flooding evaluation. **Coursework in Surface Hydrology, Hydrologic Engineering, Open Channel Hydraulics and Hydraulic Engineering is required.** ☐ I have the knowledge, relevant coursework **and** desire to work in this section.

**CONSTRUCTION INSPECTION.** The Construction Inspection Division's (CID) goal is to have the Transportation Engineers it hires become the Project Engineers (PE) on major construction projects. These projects include multi-million dollar contracts for highways, bridges and interchange construction. To facilitate your progression to the PE level you will be enrolled in our Transportation Engineer Rotation Program. This self-directed four year program is designed to help the entry level engineer learn about the various aspects of construction management and administration. ☐ I have the knowledge, relevant coursework **and** desire to work in this section.

**HIGHWAY DESIGN.** A new engineer in the Highway or Community Design Division will be responsible for the geometric design of a roadway project and management of the overall design, schedule and budget of the project, resulting in a complete set of plans, specifications and estimate for construction. **Coursework in Transportation Engineering or Highway Engineering is required** ☐ I have the knowledge, relevant coursework **and** desire to work in this section.

**HIGHWAY HYDRAULICS.** This division is responsible for hydrologic and hydraulic analysis and design of highway drainage systems, including storm water management and pollution reduction facilities, erosion and sediment control, storm drains, culverts, and small dams. Additional responsibilities include flood evaluations, drainage problem investigations, and stream rehabilitation. Coursework in Hydrology and Hydraulics is necessary. ☐ I have the knowledge, relevant coursework **and** desire to work in this section.

**OFFICE OF PLANNING & PRELIMINARY ENGINEERING.** This office is responsible for obtaining location, design, and environmental approvals for State highway improvements. A new engineer in the Project Management Division would be responsible for conducting preliminary engineering, giving presentations to and coordinating with other internal SHA offices, local government representatives, elected officials, community representatives and environmental agencies on key project related issues. Engineers also perform comprehensive planning, community liaison functions and transportation studies. ☐ I have the knowledge, relevant coursework **and** desire to work in this section.

**TRAFFIC & SAFETY.** This section is responsible for the study, planning, design, installation and operation of all traffic control devices along the State system. Coursework in Traffic and Transportation Engineering is necessary. ☐ I have the knowledge, relevant coursework **and** desire to work in this section.

**MATERIALS TECHNOLOGY.** This section is responsible for the management and design of geotechnical and pavement structures, engineering and evaluation of geologic features, as well as the testing and inspection of constructed and fabricated materials used in the construction and maintenance of roads and bridges. Applicants should have coursework in Pavement Design/Management, Geotechnical Engineering, and the Material Sciences. ☐ I have the knowledge, relevant coursework **and** desire to work in this section.

**LAND SURVEYING ENGINEERING.** This division is made up of two is sections: Survey (responsible for topographic, metes & bounds, photogrammetric, geodetic control layout, hydraulic, and construction/right of way stake-out surveys) and Plats (develops SHA right of way plats for the acquisition and conveyance of real property; responsible for property line analysis, survey data processing, and land records research). **Coursework in Plane Surveying, Surveying Computations (horizontal curves, spirals, COGO), Survey Boundary Law, and Geodetic/Traverse Control is required.** ☐ I have the knowledge, relevant coursework **and** desire to work in this section.